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E90 Topic Selection:

We propose to redesign the ROV submersible that Samantha Brody and Maila Sepri constructed for their E90 project. The propulsion system and frame will be modified to allow the ROV to submerge and ascend without the use of weights as well as to facilitate better control of movement. This will be accomplished using a dynamic buoyancy control system. In addition, gyroscopes and accelerometers will be calibrated against each other in order to calculate the orientation, position, and motion vectors of the submersible. The joystick control system developed by Nicholas Ward '05 will be integrated with control algorithms to ensure smooth and responsive operation of the ROV. The communication with the ROV will be a wireless system so as to accommodate remote operation of the submersible.

The frame will be constructed from PVC piping and acquired from any local hardware store. The propulsion system is yet to be finalized but will most likely be obtained from a local hobby store or from an online vendor. Most of the electronics for the wireless system will be used from previous projects. Batteries will either be obtained from Professor Everbach, department stock, or an online vendor.

We will be working with Professor Everbach as our advisor.